HPL ELECTRIC & POWER LIMITED
Branch Office: No. 2-D. 2nd Floor, Farah Winsford
No. 133, Infantry Road, Bangalore - 560 001
Phone : +91-80-22863068 / 22863069
E-mail : bangalore@hpindia.com

The Executive Engineer (Electrical)
Bruhat Bangalore Mahanagara Palike,
Bangalore.

11.10.2022
HPL/EE/202/2022

Dear Sir,

Sub: Manufacturer's Warranty Certificate.

This is to certify that the 100A 4P Contactors Qty 615No.,100A TP MCCBs Qty 615No,63A SP MCB 10KA Qty 615No and 10A SP MCB 10KA Qty 615No. supplied to Kumar Electricals, Chandra Layout, Bangalore through Spectrum Consultants, Bangalore are tested in our factory and carries WARRANTY for 12 Months from the date of supply against any manufacturing defects.

This is for your kind information.

Thanking you

For HPL Electric and Power Ltd

Lakshmisha Prasanna Kumar
AGM Sales and Marketing- Industrial Products
Mobile: 9535504605

CENTRAL POWER RESEARCH INSTITUTE
ENERGY EFFICIANCY AND RENEWABLE ENERGY DIVISION

CPRI

TEST RESULTS

Sl. No	Particulars	Manufacturer specification	Observation
01	Visual Examination	Device shall examine for the finish	Complies
02	Current Draw Test	1.5 W	1.342 W
03	Sensitivity test	i. Switching ON the load current at nature light is less than 60 ± 20 Lux. ii. Switching OFF the load current at nature light is more than 10 Lux ± 50% continuously more than 60 seconds.	Complies, The lamps are switching ON when the ambient light condition is less than 60 Lux and the lamps are switching OFF when the ambient lighting level is more than 10 lux.
04	Immunity Test	The device will be immune to the light emitted by the artificial light source, so as not to impair it's judgment of the ambient day/night condition	Complies, The nature switch is sensing only the ambient light condition for load on/off. No artificial lights below 500 lux are sensed by the device.
05	Response time Test	Response time for switching on/off is 31 seconds	30 seconds
06	Operating Voltage range test	150 V to 276 V	Complies
07	Voltage drop test	Less than 500 mV	98.46 mV
08	Insulation Resistance (dry) test	Not less than 5 MΩ	354 MΩ (Measured with 500 V DC Megger)
09	Drop and topple test	Drop at a height of 5 feet	Complies
10	Over voltage Trip and auto reset test	Load cut off – 280 ± 3 V Reset – 265 ± 3 V	276 V 267 V
11	Under voltage trip and auto reset test	Load cut off - 150 ± 3 V Reset – 160 ± 3 V	147 V 162 V
12	Overload trip and lock out test	Over load trip -20 A Lock out = 15 A	21.32 A 14.57 A
13	Endurance test	for 6000 on/off cycle test (30 sec on and 30 sec 0ff)	Complies

Test In-Charge

Test Engineer

CENTRAL POWER RESEARCH INSTITUTE
ENERGY EFFICIANCY AND RENEWABLE ENERGY DIVISION

CPRI

TEST REPORT

Sl. No.	Particulars	Details
01	Test report no.	CPRI/ERED/SPV/MS/152/2011
02	Date	12/09/2011
03	Client's address	M/s. Kakatiya Energy Systems Limited H. No.3-6-272, 3rd floor, N.V.K Towers, Himayathnagar, Hyderabad – 500 029
04	Reference	Nil, dated 01/03/2011
05	Manufacturer's address	Same as above
06	Reference	--
07	Sample tested	Nature Switch
08	Designation	Nature switch
09	Configuration	Nature switch for street lighting systems
10	Identification no.	ERED/SPV/1735/2011
11	Serial no.	NS01138629
12	Date (s) of the test	16/08/2011 to 09/09/2011
13	No. of samples tested	One
14	Test in accordance with standards/specifications	As per Manufacturer's Specification
15	Client's requirement	Nil
16	Deviation (if any)	Nil
17	Name of the witnessing persons	Nil
18	Clients representative	Nil
19	Other than clients representative	Nil
20	No. of pages (including this page)	Two
21	No. of oscillograms	Nil
22	No. of drawings	Nil
23	No. of graphs	Nil
24	No. of photos	Nil

Test In-charge

(M. Siddhartha Bhatt)
Additional Director

NOTE:

a) This is not a certificate of compliance.

b) These test results relate only to the items tested, which are selected and submitted by the client mentioned above.

c) The data reported in this test report are valid at the time of and under the stipulated conditions o measurements.

d) Publications or reproduction of this report in any form other than by complete set of the whole report and i the language written is not permitted without consent of CPRI.

e) Correction/erasing invalidate the test report.

Sanray Laboratories Pvt Ltd.
Plot No. 48, Sy No.302/3
EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
Telangana.

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TEST REPORT

Issued To	: M/s. KAKATIYA ENERGY SYSTEMS PVT LTD	Report No	: STL/220121004457
		Date of Receipt	: 20/01/2022
Address	:D ST 2, INDUSTRIAL ESTATE, MOULA ALI, HYDERABAD-500040	Date of Start	: 21/01/2022
		Date of Completion	: 26/01/2022
		Report Date	: 27/01/2022
		Location	: Location 1

Ref. No : CRF NO: 175,Dt:21/01/2022
Sample Details : NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI , NATURE SWITCH-GEO, NATURE SWITCH-IOT NODE(R) & NATURE SWITCH-IOT NODE(M)
Sample Description : Sl. NO: S16266, 10-22-4821, 10-22-4676, MINI2281810, 30-2107-321-005 , S16500(M) & UID:60011(R).
Sample Qty : 07 No's
Test Required : SWITCHING ENDURANCE TEST & ABNORMAL SUPPLY VOLTAGE WITHSTAND TEST

01	Discipline/Group	Electronics/Environmental Test Facility
02	Scope of test :	SWITCHING ENDURANCE TEST
03	Test specification :	No.of switching cycles :- 5000 Cycle parameter :- ON (30sec) & OFF (30 sec) Load :- UUT Rated load
04	Test Method & Standard:	As per customer specification
05	Deviation if any	No
06	Climatic Ambient Conditions:	Temperature : 25°C±3°C, Humidity: 50% to 70%RH
07	Description & identification of test Item	
	Nomenclature (UUT) : (Unit Under Test)	NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI , NATURE SWITCH-GEO, NATURE SWITCH-IOT NODE(R) &NATURE SWITCH-IOT NODE(M)
	Sl. No	S16266, 10-22-4821, 10-22-4676, MINI2281810, 30-2107-321-005 S16500(M) & UID:60011(R).
	Quantity:	07 No's
	Condition of test sample:	Good

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD
Authorized Signatory

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EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
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TEST REPORT

Report No: STL/220121004457

08	Test procedure: 1) All UUT's Powered with 230V AC Supply and connected with lighting load of rated capacity. 2) UUT's are configured to switch ON (30sec) and OFF (30 sec) Continuously. 3) They left to Operate in the above mode for 83.5 hrs. 4) Test was completed successfully.	
09	Observation	No structural & functional degradation was found during and after the test. Functional test as per ANNEXURE-1
10	Test starting date	21/01/2022
11	Test completion date	25/01/2022

SANRAY LABORATORIES PVT. LTD. HYDERABAD

27/01/2022

For SANRAY LABORATORIES PVT LTD

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Kushaiguda, Hyderabad - 500 062
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TEST REPORT

Report No: STL/220121004457

01	Discipline/Group	Electronics/Environmental Test Facility
02	Scope of test :	ABNORMAL SUPPLY VOLTAGE WITHSTAND TEST
03	Test specification :	Supply Voltage :- 415V Duration :- 24hrs. Load :- no load
04	Test Method & Standard:	As per customer specification
05	Deviation if any	No
06	Climatic Ambient Conditions:	Temperature : 25°C±3°C, Humidity: 50% to 70%RH
07	Description & identification of test Item	
	Nomenclature (UUT) : (Unit Under Test)	NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI , NATURE SWITCH-GEO, NATURE SWITCH-IOT NODE(R) &NATURE SWITCH-IOT NODE(M)
	Sl. No	S16266, 10-22-4821, 10-22-4676, MINI2281810, 30-2107-321-005 S16500(M) & UID:60011(R).
	Quantity:	07 No's
	Condition of test sample:	Good

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TEST REPORT

Report No: STL/220121004457

08	Test procedure: 1) All UUT's are Powered with 415V AC Supply to the input supply terminals 2)There is no load connected to the output of the UUT's. 3) They left to Operate in the above mode for 24 hrs. 4) Test was completed successfully.	
09	Observation	No structural & functional degradation was found during and after the test. Functional test as per ANNEXURE-1
10	Test starting date	25/01/2022
11	Test completion date	26/01/2022

SANRAY LABORATORIES PVT. LTD. HYDERABAD

27/01/22

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Report No: STL/220121004457

ANNEXURE-1

NS MINI

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150 Vac to 415 Vac	YES	YES
Voltage drop	Less than 500 mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

29/01/2022

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Report No: STL/220121004457

NS 01

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for morethan 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220121004457

NS 02

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES
Duration Timer	Load switch off post Dusk at selected duration with an accuracy of +/- 1min	YES	YES

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27-01-2022

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Report No: STL/220121004457

NS GEO

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 270 ± 3 Vac Reset : 260 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 145 ± 3 Vac Reset : 155 ± 3 Vac	YES	YES

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20/01/2022

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Report No: STL/220121004457

NS GSM

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off.is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal.	YES	YES
Energy Meter Reading	Device shall read and report to server all Instantaneous and Energy reading from the connected DLMS Energy Meter when requested from the web portal.	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

20/01/2022

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Report No: STL/220121004457

NS GSM

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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.NS IOT NODE (R)

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal (via the Wireless Communication Gateway)	YES	YES
Electrical Parameter Measurements	Built in Energy Meter function of the Device shall measure and report instantaneous Voltage, Current, Power Factor, Frequency, Real Reactive Apparent Powers and Real Reactive Apparent Energies when requested from the web portal.	YES	YES

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Report No: STL/220121004457

NS IOT NODE (R)

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

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Report No: STL/220121004457

NS IOT NODE (M)

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal.	YES	YES
Electrical Parameter Measurements	Built in Energy Meter function of the Device shall measure and report instantaneous Voltage, Current, Power Factor, Frequency, Real Reactive Apparent Powers and Real Reactive Apparent Energies when requested from the web portal.	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

20.01.2022

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Report No: STL/220121004457

NS IOT NODE (M)

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

END OF REPORT

SANRAY LABORATORIES PVT. LTD. HYDERABAD

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Plot No. 48, Sy No.302/3
EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
Telangana.

Certificate No: TC - 7379

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TEST REPORT

ULR: TC737922000000272F

Issued To	: M/s. KAKATIYA ENERGY SYSTEMS PVT LTD	Report No	: STL/220120004411
		Date of Receipt	: 20/01/2022
Address	:D 2, INDUSTRIAL ESTATE, MOULA ALI, HYDERABAD-500040	Date of Start	: 26/01/2022
		Date of Completion	: 27/01/2022
		Report Date	: 27/01/2022
		Location	: Location 1
Ref. No	: CRF NO: 168,Dt:20/01/2022		
Sample Details	: NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO		
Sample Description	: Sl. NO: S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034		
Sample Qty	: 05 No's		
Test Required	: DUST TEST(IP6X) & WATERPROOF TEST(IPX5)		

01	Scope of test :	DUST TEST(IP6X) & WATERPROOF TEST(IPX5)
02	Test specification :	DUST TEST(IP6X):- Type of Dust: Talcum Powder. Duration : 08 hours WATERPROOF TEST(IPX5):- Internal diameter of the nozzle: 6.3 mm Delivery rate: 12.5 l/min ± 5 %
03	Test Method & Standard:	IEC 60529 : 2001
04	Deviation if any	No
05	Climatic Ambient Conditions:	Temperature : 25°C±3°C, Humidity: 50% to 70%RH
06	Description & identification of test Item	
	Nomenclature (UUT) : (Unit Under Test)	NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
	Sl. No	S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
	Quantity:	05 No's
	Condition of test sample:	Good
07	Equipment Used for test	
	Nomenclature :	Rain chamber & Dust Chamber
	Make /model/Uncertainty	ER 1000-IP-JSS, SL.No: ET/003/17-19 & ENVISYS- EDC 1000-JSS-55555 Sl. No. ET/002/17-19
	Calibration validity	20/06/2022 & 20/06/2022
08	Test setup :	UUT placed inside the Rain chamber for Waterproof test., after completion of the Waterproof test, UUT was placed in the Dust chamber for Dust test.

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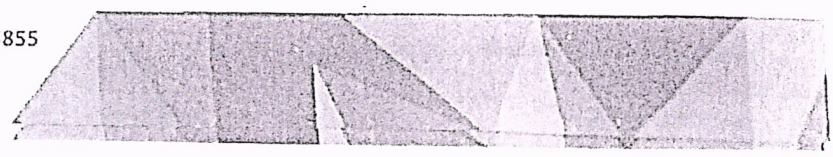

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Plot No. 48, Sy No.302/3
EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
Telangana.

Certificate No: TC - 7379

TEST REPORT

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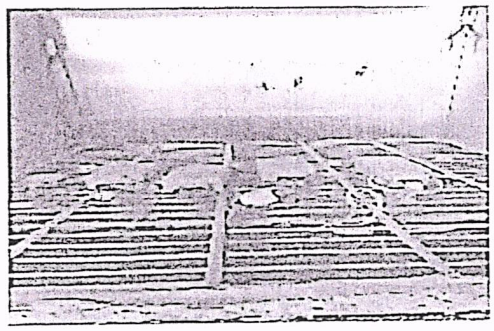
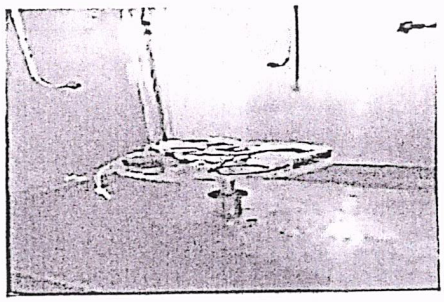
Report No: STL/220120004411

09	Test procedure: 1) Switched ON the Rain chamber and UUT was Placed inside the Chamber. 2) Test started as per the specification. 3) After completion of the test, UUT was placed in the Dust chamber for dust test. 4) Test started as per the specification. 5) Test was completed successfully.	
	Figure:	
10	Observation	WATERPROOF TEST(IPX5):- After testing, Visual inspection showed no water droplets permitted in to the Unit. DUST TEST (IP6X) :- After testing, Visual inspection showed no dust particles permeated in to the unit. Functional test as per ANNEXURE-1
11	Test starting date	26/01/2022
12	Test completion date	27/01/2022





SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004411

ANNEXURE-1

NS MINI

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150 Vac to 415 Vac	YES	YES
Voltage drop	Less than 500 mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004411

NS 01

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for morethan 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES

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Report No: STL/220120004411

NS 02

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES
Duration Timer	Load switch off post Dusk at selected duration with an accuracy of +/- 1min	YES	YES

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For S NRAY LABORATORIES PVT LTD

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Report No: STL/220120004411

NS GEO

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 270 ± 3 Vac Reset : 260 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 145 ± 3 Vac Reset : 155 ± 3 Vac	YES	YES

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Report No: STL/220120004411

NS GSM

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal.	YES	YES
Energy Meter Reading	Device shall read and report to server all Instantaneous and Energy reading from the connected DLMS Energy Meter when requested from the web portal.	YES	YES

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Report No: STL/220120004411

NS GSM

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

END OF REPORT

S.N.RAY LABORATORIES P. LTD. HYDERABAD

For S.N.RAY LABORATORIES PVT LTD

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Plot No. 48, Sy No.302/3
EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
Telangana.

Certificate No: TC - 7379

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TEST REPORT

ULR: TC737922000000270F

Issued To	: M/s. KAKATIYA ENERGY SYSTEMS PVT LTD	Report No	: STL/220120004409
		Date of Receipt	: 20/01/2022
Address	:D 2, INDUSTRIAL ESTATE, MOULA ALI, HYDERABAD-500040	Date of Start	: 24/01/2022
		Date of Completion	: 25/01/2022
		Report Date	: 27/01/2022
		Location	: Location 1

Ref. No : CRF NO: 168,Dt:20/01/2022
Sample Details : NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
Sample Description : Sl. NO: S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
Sample Qty : 05 No's
Test Required : Dry Heat Test

01	Discipline/Group	Electronics/Environmental Test Facility
02	Scope of test :	Dry Heat Test(POWER ON CONDITION)
03	Test specification :	Temperature :- +55°C Duration :- 24 hrs.
04	Test Method & Standard:	IS 9000(Part 3/Sec 3)
05	Deviation if any	No
06	Climatic Ambient Conditions:	Temperature : 25°C±3°C, Humidity: 50% to 70%RH
07	Description & identification of test Item	
	Nomenclature (UUT) : (Unit Under Test)	NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
	Sl. No	S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
	Quantity:	05 No's
	Condition of test sample:	Good
08	Equipment Used for test	
	Nomenclature :	Thermotron
	Make /model/Uncertainty	SM-8C,SL.No: 25-2896-01
	Calibration validity	15/11/2022
09	Test setup :	UUT was placed inside the chamber, so that the air circulation takes place along all sides of the UUT

LABORATORIES PVT LTD HYDERABAD

For SANRAY LABORATORIES PVT LTD
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TEST REPORT

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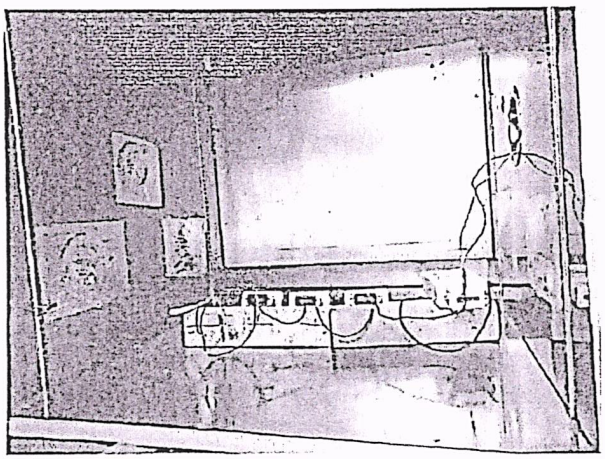
Report No: STL/220120004409

10	Test procedure: 1) Switched ON the chamber and UUT placed inside the chamber. 2) Test specification programmed as per the customer specification, started the program. 3) On completion of the program, chamber temperature were brought back to ambient condition. 4) Test was completed successfully. Chamber was Switched OFF.	
	Figure: 	
11	Observation	No structural & functional degradation was found during and after the test. Functional test as per ANNEXURE-1
12	Test starting date	24/01/2022
13	Test completion date	25/01/2022

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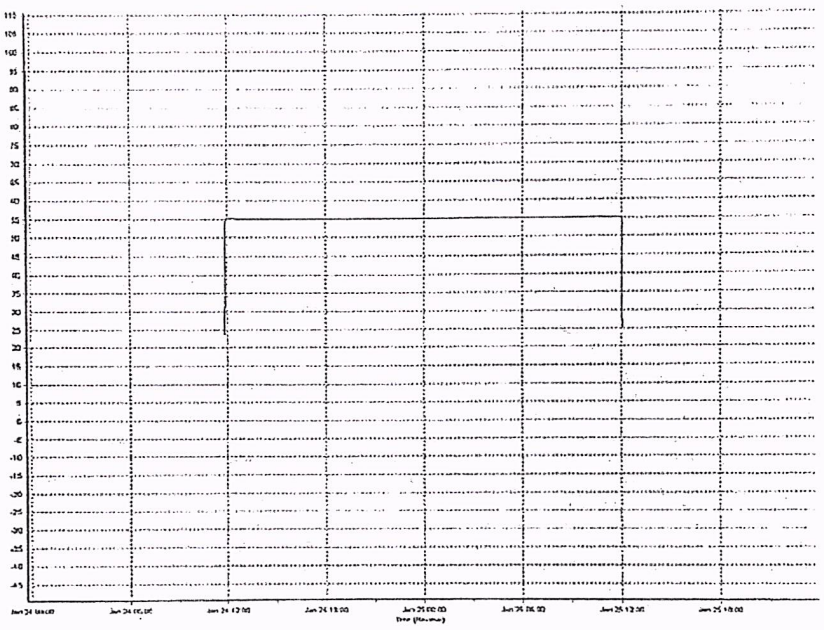
TEST GRAPH :



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Report No: STL/220120004409

ANNEXURE-1

NS MINI

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150 Vac to 415 Vac	YES	YES
Voltage drop	Less than 500 mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

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Report No: STL/220120004409

NS 01

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for morethan 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES

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Report No: STL/220120004409

NS 02

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES
Duration Timer	Load switch off post Dusk at selected duration with an accuracy of +/- 1min	YES	YES

SANRAY LABORATORIES PVT LTD HYDERABAD

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Report No: STL/220120004409

NS GEO

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 270 ± 3 Vac Reset : 260 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 145 ± 3 Vac Reset : 155 ± 3 Vac	YES	YES

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Report No: STL/220120004409

NS GSM

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal.	YES	YES
Energy Meter Reading	Device shall read and report to server all Instantaneous and Energy reading from the connected DLMS Energy Meter when requested from the web portal.	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004409

NS GSM

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

END OF REPORT

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

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EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
Telangana.

Certificate No: TC - 7379

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TEST REPORT

ULR: TC737922000000269F

Issued To	: M/s. KAKATIYA ENERGY SYSTEMS PVT LTD	Report No	: STL/220120004408
		Date of Receipt	: 20/01/2022
Address	:D 2, INDUSTRIAL ESTATE, MOULA ALI, HYDERABAD-500040	Date of Start	: 20/01/2022
		Date of Completion	: 22/01/2022
		Report Date	: 27/01/2022
		Location	: Location 1

Ref. No : CRF NO: 168,Dt:20/01/2022
Sample Details : NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
Sample Description : Sl. NO: S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
Sample Qty : 05 No's
Test Required : Damp Heat Test

01	Discipline/Group	Electronics/Environmental Test Facility
02	Scope of test :	Damp Heat Test(POWER ON CONDITION)
03	Test specification :	Temperature :- +55°C Humidity :- 95%RH No.of cycles :- 2
04	Test Method & Standard:	IS 9000(Part 5/Sec 2)
05	Deviation if any	No
06	Climatic Ambient Conditions:	Temperature : 25°C±3°C, Humidity: 50% to 70%RH
07	Description & identification of test Item	
	Nomenclature (UUT) : (Unit Under Test)	NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
	Sl. No	S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
	Quantity:	05 No's
	Condition of test sample:	Good
08	Equipment Used for test	
	Nomenclature :	Votsch
	Make /model/Uncertainty	VC 0060, SL.No.58566050490010.
	Calibration validity	23/03/2022.
09	Test setup :	UUT was placed inside the chamber, so that the air circulation takes place along all sides of the UUT

SANRAY LABORATORIES PVT LTD HYDERABAD

For SANRAY LABORATORIES PVT LTD
Authorized Signatory

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Telangana.

Certificate No: TC - 7379

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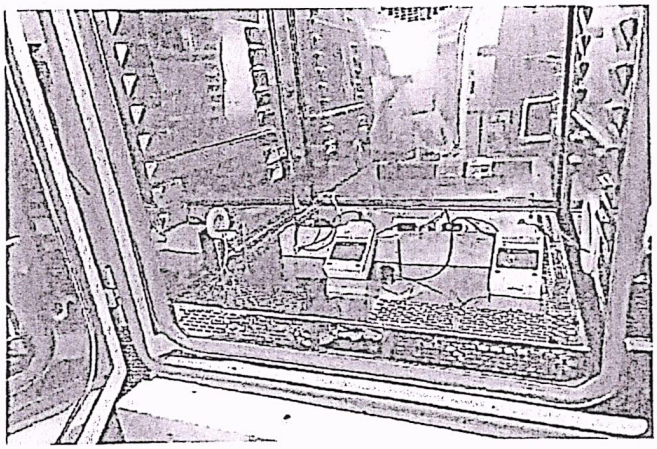
TEST REPORT

Report No: STL/220120004408

10	Test procedure: 1) Switched ON the chamber and UUT placed inside the chamber. 2) Test specification programmed as per the specification, started the program. 3) On completion of the program, chamber temperature and humidity were brought back to ambient condition. 4) Test was completed successfully. Chamber was Switched OFF.	
	Figure: 	
11	Observation	No structural & functional degradation was found during and after the test. Functional test as per ANNEXURE-1
12	Test starting date	20/01/2022
13	Test completion date	22/01/2022

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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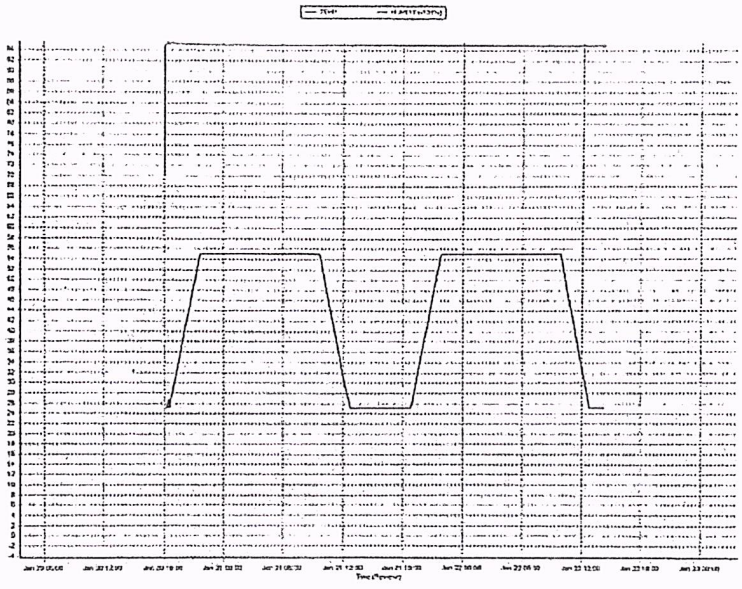
Report No: STL/220120004408

TEST GRAPH :



For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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Report No: STL/220120004408

ANNEXURE-1

NS MINI

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150 Vac to 415 Vac	YES	YES
Voltage drop	Less than 500 mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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Report No: STL/220120004408

NS 01

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for morethan 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004408

NS 02

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES
Duration Timer	Load switch off post Dusk at selected duration with an accuracy of +/- 1min	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004408

NS GEO

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 270 ± 3 Vac Reset : 260 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 145 ± 3 Vac Reset : 155 ± 3 Vac	YES	YES

SANRAY LABORATORIES (P) LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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Report No: STL/220120004408

·NS GSM

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal.	YES	YES
Energy Meter Reading	Device shall read and report to server all Instantaneous and Energy reading from the connected DLMS Energy Meter when requested from the web portal.	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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Report No: STL/220120004408

NS GSM

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

END OF REPORT

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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Sanray Laboratories Pvt Ltd.
Plot No. 48, Sy No.302/3
EC Extension, ECIL 'X' Roads
Kushaiguda, Hyderabad - 500 062
Telangana.

Certificate No: TC - 7379

TEST REPORT

SANRAY
It adds Value

ULR: TC737922000000273F

Issued To	: M/s. KAKATIYA ENERGY SYSTEMS PVT LTD	Report No	: STL/220120004410
		Date of Receipt	: 20/01/2022
Address	:D 2, INDUSTRIAL ESTATE, MOULA ALI, HYDERABAD-500040	Date of Start	: 25/01/2022
		Date of Completion	: 26/01/2022
		Report Date	: 27/01/2022
		Location	: Location 1

Ref. No : CRF NO: 168,Dt:20/01/2022
Sample Details : NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
Sample Description : Sl. NO: S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
Sample Qty : 05 No's
Test Required : Cold Test

01	Discipline/Group	Electronics/Environmental Test Facility
02	Scope of test :	Cold Test (POWER ON CONDITION)
03	Test specification :	Temperature :- -30°C Duration :- 12 hrs.
04	Test Method & Standard:	IS 9000(Part 2/Sec 3)
05	Deviation if any	No
06	Climatic Ambient Conditions:	Temperature : 25°C±3°C, Humidity: 50% to 70%RH
07	Description & identification of test Item	
	Nomenclature (UUT) : (Unit Under Test)	NATURE SWITCH-GSM, NATURE SWITCH-01, NATURE SWITCH -02, NATURE SWITCH-MINI & NATURE SWITCH-GEO
	Sl. No	S16486, 10-2107-3250, 10-2112-4225, 2201-815& 30-2107-321-034
	Quantity:	05 No's
	Condition of test sample:	Good
08	Equipment Used for test	
	Nomenclature :	Thermotron
	Make /model/Uncertainty	SM-8C,SL.No: 25-2896-01
	Calibration validity	15/11/2022
09	Test setup :	UUT was placed inside the chamber, so that the air circulation takes place along all sides of the UUT

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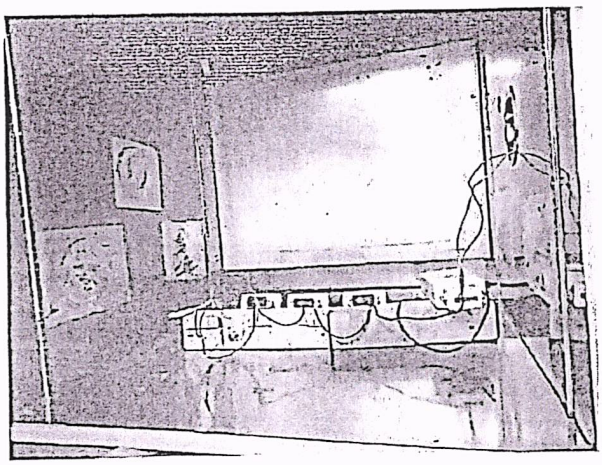
Kushaiguda, Hyderabad - 500 062
Telangana.

Certificate No: TC - 7379

TEST REPORT

SANRAY
It adds Value

Report No: STL/220120004410

10	Test procedure: 1) Switched ON the chamber and UUT placed inside the chamber. 2) Test specification programmed as per the customer specification, started the program. 3) On completion of the program, chamber temperature were brought back to ambient condition. 4) Test was completed successfully. Chamber was Switched OFF.	
	Figure: 	
11	Observation	No structural & functional degradation was found during and after the test. Functional test as per ANNEXURE-1
12	Test starting date	25/01/2022
13	Test completion date	26/01/2022

SANRAY LABORATORIES (I) PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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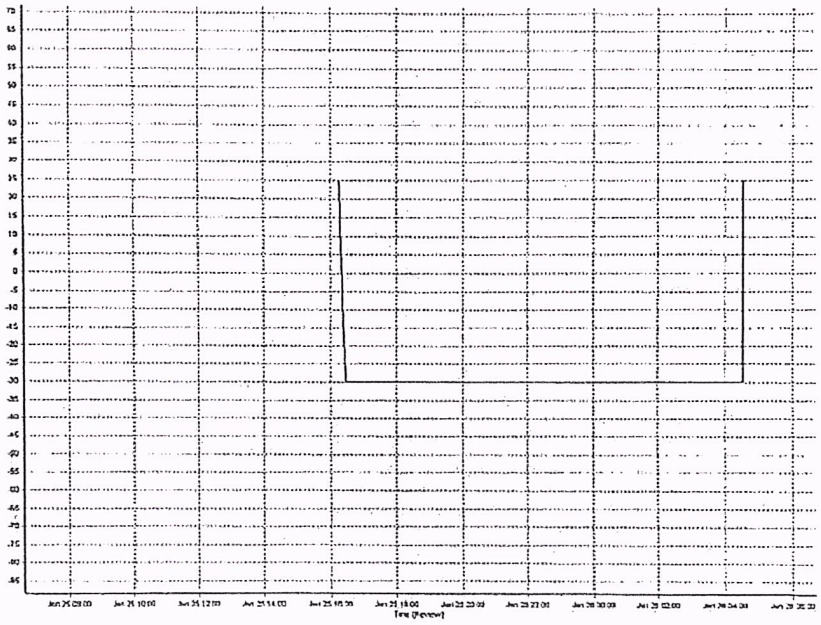
Report No: STL/220120004410

TEST GRAPH :



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Report No: STL/220120004410

ANNEXURE-1

NS MINI

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150 Vac to 415 Vac	YES	YES
Voltage drop	Less than 500 mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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Report No: STL/220120004410

NS 01

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw Test	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for morethan 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES

SANRAY LABORATORIES PVT. LTD. HYDERABAD

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004410

NS 02

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 280 ± 3 Vac Reset : 265 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 150 ± 3 Vac Reset : 160 ± 3 Vac	YES	YES
Overload trip and lock out	Over load trip : 16A Lock out : 16A	YES	YES
Duration Timer	Load switch off post Dusk at selected duration with an accuracy of +/- 1min	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004410

NS GEO

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 1.0 W @ 240 Vac	YES	YES
Sensitivity	Switch ON the load when natural light is less than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than 30 seconds.	YES	YES
Immunity	The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	Trip : 270 ± 3 Vac Reset : 260 ± 3 Vac	YES	YES
Under voltage trip and auto reset	Trip : 145 ± 3 Vac Reset : 155 ± 3 Vac	YES	YES

SANRAY LABORATORIES (INDIA) PVT. LTD.

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004410

NS GSM

Parameter	Specification	Initial Checks	After Test
Visual Examination	Device finish and labels should remain visually same after the test	YES	YES
Input Power Draw	Less than 2.0 W @ 240 Vac	YES	YES
Sensitivity	When set in Pure Nature Switch Mode from the web portal :Switch ON the load when natural light isless than 60 ± 20Lux continuously for more than 30 seconds. Switching OFF the load when natural light more than 10 Lux ± 50% continuously for more than30 seconds.	YES	YES
Immunity	When set in Pure Nature Switch Mode from the web portal :The device will be immune to the light of less than 500 lux emitted by any artificial light source with a CCT of more than 5000 K so as not to impair it's judgment of the ambient day/night condition.	YES	YES
Additional Immunity	When set in Pure Nature Switch Astro Mode from the web portal:Post installation, once the GNSS SYNC is acquired; the device shall not switch ON the load even when Light Level is less than 10 lux during the day (i.e. Dawn to Dusk). Similarly, the device shall not switch OFF the load during the Night (i.e. Dusk to Dawn) even when exposed to an Incandescent Lamp of CCT less than 5000 K with Lux level of more than 500 Lux.	YES	YES
Response time	Response time for switching on/off is less than 31 seconds	YES	YES
Timer Accuracy	When set in Timer Mode, the device shall switch ON and OFF the load with an accuracy of +/- 1min.	YES	YES
Remote Operation	Device shall switch ON and OFF load any time with remote over ride command from the web portal.	YES	YES
Energy Meter Reading	Device shall read and report to server all Instantaneous and Energy reading from the connected DLMS Energy Meter when requested from the web portal.	YES	YES

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

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Report No: STL/220120004410

NS GSM

Parameter	Specification	Initial Checks	After Test
Operating Voltage range	150Vac to 415Vac	YES	YES
Voltage drop	Less than 500mV	YES	YES
Insulation Resistance (dry)	More than 5MOhm	YES	YES
Overvoltage Trip and auto reset	As per setting : Trip : 265 ± 3 Vac Reset : 255 ± 3 Vac	YES	YES
Under voltage trip and auto reset	As per setting : Trip : 180 ± 3 Vac Reset : 190 ± 3 Vac	YES	YES

END OF REPORT

SANRAY LABORATORIES HYDERABAD PVT. LTD.

For SANRAY LABORATORIES PVT LTD

Authorized Signatory

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